

ABSTRACT OF THE DISCLOSURE

5 Provided is a projection optical system for forming an image of a pattern of a first object (R) on a second object (W). The projection optical system is made of an optical material having a refractive index

10 of not more than 1.6 and is substantially telecentric both on the first object side and on the second object side. The projection optical system satisfies the condition of $(\lambda \times L) / (NA \times Y_0^2) < 1.5 \times 10^{-3}$, where λ is a wavelength of light, L a distance between the first object and the second object, NA a numerical aperture on the second object side, and Y_0 a maximum image height on the second object.